REMARKS

The claims have been amended to more clearly define the invention as disclosed in the written description. In particular, claims 1, 8 and 9 have been amended for clarity.

The Examiner has rejected claim 9 under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention, in that the process is not tied to another statutory category (such as a particular apparatus).

Applicants submit that the steps in claim 9, as amended, are now clearly tied to another statutory category, and as such, claim 9 is indeed statutory.

The Examiner has rejected claim 10 under 35 U.S.C. 101 in that the claimed invention is directed to non-statutory subject matter.

Applicants submit that the Examiner is mistaken. While the Examiner states "the specification as originally filed discloses that the computer readable medium may be realized as data stored on a data carrier (p. 1 and p. 13) or transmitted over a signal transmission system (p. 13)", the specification as filed actually states "The invention also relates to a data carrier storing the computer program." (page 1, line 20), and "The invention can be implemented by means of hardware or by means of software running on a computer, and previously stored on a data carrier or transmitted over a signal transmission system." (page 13, lines 27-29). Hence, the specification states that **the software** is stored on a data carrier, or **the software** is transmitted to the computer over a

signal transmission system. With MPEP §608.01(o) in mind, Applicants have amended the specification on page 13 to indicate that the software is stored on a data carrier, e.g., a computer-readable medium.

Applicants would further like to point out that a computer receiving a software program via a signal transmission, e.g., downloaded from the Internet, stores such a program in memory form which the computer then executes the steps in the software program. Hence, it is inherent that when a computer receives a software program, the software program is stored on (or in) a computer-readable medium (the computer memory).

In view of the above, Applicants submit that the subject invention as claimed in claim 10 is indeed statutory under 35 U.S.C. 101.

The Examiner has reinstated the substantive rejections which had formed the basis of Applicants' previous appeal, i.e., the Examiner has rejected claims 1 and 3-10 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,785,667 to Orbanes et al., and claim 2 under 35 U.S.C. 103(a) as being unpatentable over Orbanes et al. in view of U.S. Patent 5,987,142 to Courneau et al.

Applicants' arguments contained in the Brief are incorporated herein.

The Orbanes et al. patent discloses a method and apparatus for extracting data objects and locating them in virtual space, in which the system enables "the user to view, search through and interact with information through a virtual environment, which is

related to a selected physical paradigm, in an unrestricted manner" (col. 1, lines 17-21). In particular, as described in Orbanes et al. at col. 7, lines 57-63, "FIG. 1 is a schematic diagram depicting an exemplary embodiment of a viewing a system 100 in accord with the invention. The viewing system 100 includes an extractor module 102, a stylizer module 104, a template 105, a protocolizer 106, user controls 107, and a display 108, which present data objects to the user in a virtual three dimensional space 110."

The subject invention relates to a data representation apparatus which provides, to a user of the apparatus, an audio signal processed such that it seems to originate from different spatial positions around a user's head depending on the value of a positionless data signal. This is described in the specification on page 8, line 27 to page 9, line 5, in which the data representation apparatus may be arranged in an MP3 player where the positionless data signal relates to the, e.g., jogging pace of the user. In one embodiment, a beep may be added to the music being reproduced, the spatial positioning of the beep being indicative to the user of his/her pace, the position directly in front of the user indicating he/she is running at his/her desired pace.

The Examiner indicates "Orbanes discloses a data representation apparatus for representing data by means of an audio signal. In one embodiment Orbanes teaches that the system would respond to voice commands (reads on the claimed positionless data,

with different commands corresponding to the first value and the second value). See col. 37, lines 60-64."

The portion of Orbanes et al. noted by the Examiner states:

> "Other enhancements to the system 100 include using voice recognition. According to one embodiment, the user can speak all of the available system commands, such as, "zoom in", "zoom out", "pan left", select <object> where <object> is a word(s) in a database."

It is not clear to Applicants how the Examiner is equating this disclosure in Orbanes et al. with the claim limitations "A data representation apparatus for representing data by means of an audio signal" and "an audio processing unit for delivering the audio signal with a characteristic dependent upon a positionless data signal having at least a first value and a second value".

The Examiner now states:

> "Data, according to Webster's Ninth New Collegiate Dictionary, means factual information used as a basis for reasoning, discussion or calculation. The claimed data could reads on factual information represented by a map in Orbanes. Orbanes' system not only can display the regular map (with street and icon), it can also supplement the map scene with audio information related to the displayed map. What kind of audio information is going to be generated? Orbanes teaches that it depends on the voice commands (reads on the claimed positionless data signal having at least a first value and a second value)."

For argument's sake, let us assume that the display of Orbanes et al. is displaying a map, the audio signal in Orbanes et al. is "street noise" and the positionless data signal(s) are the voice commands issued by the user. According to Orbanes et al., if the voice command were "zoom in", then the display would zoom in on

the map, and the sound level of the "street noise" would be increased. While this is indeed a form of mapping, it does not approach the claim limitation "a mapping unit for mapping the first value of the positionless data signal to a first position in a three-dimensional space around a user's head, and the second value of the positionless data signal to a second position in the three-dimensional space, wherein the audio processing unit changes the characteristic of the audio signal, resulting in the audio signal appearing, to a user listening to the audio signal, to originate from the first position when the positionless data signal has the first value, and from the second position when the positionless data signal has the second value." Note that in Orbanes et al., there is no first position nor second position of the audio signal around the user's head. Rather, there is just a change in the volume of the audio signal.

The Examiner then states:

> "On p. 15, applicant stated that Orbanes fails to disclose the claimed "a mapping unit for mapping the first value of the positionless data signal to a first position in three-dimensional space, and the second value of the positionless data signal to a second position in three-dimensional space". Examiner does not agree. As cited on col. 38, lines 1-15, Orbanes' device simulates the virtual three-dimensional effect of a street scene. By using voice commands (reads on the claimed positionless data signal), Orbanes' device would display the street scene with different depth (zoom in or zoom out reads on the claimed positionless data signal having a first value or a second value) or different angle (pan left or pan right reads on the claimed positionless data signal having a first value or a second value). Every audio signal generated is related to the voice commands (reads on the claimed positionless data signal), thus defining the virtual three-dimensional effect of a street scene."

Applicants submit that this does not make any sense with relation to the claimed invention. The audio signal in Orbanes et al. only gets louder or softer depending on whether the voice command is "zoom in" or "zoom out". There is no processing of the audio signal such that the audio signal appears, to a user listening to the audio signal, to originate from the first position when the positionless data signal has the first value, and from the second position when the positionless data signal has the second value (it should be kept in mind that the first and second positions are in a 3-dimensional space around a user's head). While the display of Orbanes et al. may show a virtual 3-dimensional space, this is irrelevant to the subject invention. Further, it should be kept in mind that this is a **virtual** 3-dimensional space, the display is in fact 2-dimensional. It should be further noted that voice commands "pan left" or "pan right" cannot be considered positionless data signals.

Finally, with regard to Applicants' arguments concerning Courneau et al., the Examiner now states:

> "On p. 18, applicant argued that there is no motivation or incentive for combining Orbanes with Courneau. This is not convincing. Orbanes' invention uses audio signal to aid the simulation of virtual three-dimensional effect of a street scene. Applicant alleged that the audio signal would detract the user's attention from the display scene. This allegation completely ignore what has been taught in Orbanes. Examiner agrees that Orbanes' device displays visual information on a monitor. Orbanes' device also generates sound. Applicant cannot ignore the fact that Orbanes' device uses sound and visual clues to simulate the street scene depth."

Applicants submit that there is no suggestion in Orbanes et al. as to how the HRTF of Courneau et al. could be used with Orbanes et al. that would enhance the teachings of Orbanes et al. The only indication would be to move the sound signal from left-right-left, etc., depending on the voice commands "pan left", "pan right", (or up and down, on the voice commands "pan up", "pan down"). However, quite obviously, these are not positionless data signals but are rather position dependent signals.

In view of the above, Applicants believe that the subject invention, as claimed, is not rendered obvious by the prior art, and as such, is patentable thereover.

Applicants believe that this application, containing claims 1-10, is now in condition for allowance and such action is respectfully requested.

Respectfully submitted,

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